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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,173	02/07/2004	Paul E. Debevec	028080-0122	7189
7590	10/20/2004		EXAMINER	
McDermott, Will & Emery Suite 3400 2049 Century Park East Los Angeles, CA 90067			SMITH, ZANDRA V	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/774,173	Applicant(s) DEBEVEC ET AL.	
	Examiner Zandra V. Smith	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-33 is/are allowed.
- 6) ☒ Claim(s) 1, 19, 20 and 24-47 is/are rejected.
- 7) ☒ Claim(s) 2-12, 14-18 and 21-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 19-20, 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kelly (US 6,4550,664 B1)* in view of *Natori (4,908,717)*.

As to **claims 1, 24, and 27**, Kelly discloses linear illumination unit having plurality of LEDs, comprising:

a light source (10) to generate light that illuminates a portion of an object, the light source having an elongated configuration; and

an optical imaging system (line scan camera, 5) to receive reflected light and to generate image data (col. 1, lines 21-25) including spectral reflectance data (col. 6, lines 11-18). Kelly differs from the claimed invention in that an actuator is not specifically provided, however Kelly is designed for application in scanners in which the light source moves rather than the target (col. 1, lines 17-19). Natori provides an image scanner using a rod-type light source that includes an actuator to move the elongated light source (col. 4, lines 39-42). It would have been obvious to one having ordinary skill in the art at the time of invention to include an actuator to provide a means to controllably move the source during scanning. As to the processor Kelly would inherently possess a processor to analyze data.

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As to **claims 19, 25-26**, Kelly and Natori discloses everything claimed, as applied above, in addition Kelly provides a linear array of LEDs (40) and may be used for application in scanners in which the light source moves rather than the target (col. 1, lines 17-19). Natori provides a linear neon light source (10) with cylindrical configuration, a linear trajectory (see fig. 3), and the actuator provides translational movement of the light source (col. 4, lines 39-50). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a light source with a cylindrical configuration to provide continuous, even illumination of the surface and the provision of an actuator to provide translational movement would provide for scanning the entire document.

As to **claim 20**, Kelly discloses everything claimed, as applied above, in addition a digital camera (5) is provided. Please see claim 19 for the neon tube and gantry.

Claims 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kelly (US 6,455,664 B1)* and *Natori (4,908,717)* and further in view of *Rhoads (US 2002/0075531 A1)*.

As to **claim 13**, Kelly and Natori disclose everything claimed, as applied above, with the exception of synchronizing the motion of the lights with the generation of images, however to do so is well known as taught by Rhoads. Rhoads discloses a document scanner that includes synchronizing the motion of the light with the generation of images (paragraphs 54-55). It would have been obvious to one having ordinary skill in the art at the time of invention to synchronize the motion of the light with the generation of images to avoid distortions in the image.

#### *Allowable Subject Matter*

Claims 28-33 are allowable over the prior art of record.

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Claims 2-12, 14-18, and 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious spatially varying surface reflectance parameters (claim 2), diffuse and specular parameters (claim 3), each pixel having an associated pixel value that represents the image brightness of a corresponding surface unit area on the surface of the object, and wherein each image, represented by the image data, is captured at one of a succession of time points within a time period (claim 4), a laser to project a plane of light (claim 14), translucency measurement (17), each surface reflectance parameter including a plurality of spectral sensitivity components (claim 21), a curvilinear trajectory (claim 22-23), in combination with the rest of the limitations of the claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Soest et al. (5,644,392) ; Haven et al. (US 6,462,813 B1) ; Gudaitis et al. (US 2003/0128362 A1).***

### ***Fax/Telephone Information***

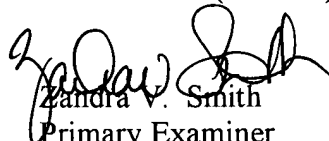
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (571) 272-2429.

The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Zandra V. Smith  
Primary Examiner  
Art Unit 2877

October 15, 2004